

Amendments to the Drawings:

The attached replacement sheets 1/3 to 3/3 showing the added reference numerals replace the three sheets of the original drawings in the application. No new matter has been added.

Attachment: Replacement Sheets 1/3, 2/3 and 3/3

REMARKS

The specification has been amended to eliminate reference to liquids other than water. The invention is directed to a pond pump having freeze protection which prevents damage to the ceramic impeller shaft when the water expands as ice forms.

The specification has also been amended for consistency and provision of additional terms to support newly added claim language. For example, paragraph [0011] refers to a drain hole, whereas paragraph [0018] referred to this hole as a discharge connection. It obviously can't be the discharge connection because it is plugged with the elastomeric diaphragm. Rather, it would be clear to one skilled in the art that the hole 11 is the drain hole mentioned in the summary, whereas the "pump connection 9" is the discharge connection for the pump.

Since both a housing 3 and an intake housing 7 are described, the former is now referred to as motor housing 3 to prevent confusion. The housing on the left in Figure 4 is now referred to as annular housing 191, which defines the annular space 190. Replacement sheets showing the added reference numerals are attached.

A significant change, is the reference to a "compressible" water displacer in paragraph [0025]. Based on the given examples of closed cell foam and an air-filled membrane, one skilled in the art realizes that the water displacer must be compressible in every case. Being compressible is the characteristic which enables the water displacer to protect the ceramic shaft against the force of the expanding ice. Accordingly this change is not felt to represent new matter.

The pond pump according to the invention is designed to prevent ice damage when left in a pond under freezing conditions, when the pump is not operating. The idea is to avoid the necessity of removing the pump during periods of freezing weather. See paragraph [0005].

Independent claim 6 has been amended to recite the motor as part of the motor-driven pump, and to separately recite the motor housing and the intake housing. It is also now clear that the impeller and the rotor are on the same shaft. This narrowing of the claim avoids a great deal of prior art, including the references cited by the examiner. Newly submitted claims 11-18 recite features of the three embodiments disclosed in Figures 1-5 and described in the specification.

Claims 6-8 stood rejected under 35 U.S.C. §102(b) as being anticipated by Nguyen US 2002/0094286. To the extent that this reference would be applied against claims as presently amended, such rejection is traversed for the reasons following.

Nguyen discloses a pump for liquid natural gas (LNG), i.e. a pump for operation under cryogenic conditions. The problems addressed are not ice formation, but the choice of materials and construction for extremely low temperatures such as -150C. A motor 60 drives a shaft 58 with a coupler 57 carrying magnets 56. The magnets 56 act through the stationary housing 44 to cooperate with magnets 24 fixed to impeller shaft 14 surrounded by a casing 40. The housing 44 isolates the motor shaft from the impeller shaft, which is immersed in LNG. There is no basis for referring to the casing 40 (or 140) as anti-freeze protection, because the LNG is not subject to freezing during operation. There is no suggestion of using this specially designed pump in water.

Since Nguyen does not disclose a pump having a rotor and an impeller on a common shaft, it cannot be an anticipation.

Claim 9 stands rejected under 35 U.S.C. §103 as being unpatentable over Nguyen in view of Atkinson US 3,808,830. The latter discloses a casing 120 having an open end 122 covered by a flexible diaphragm 124 which encloses water in the casing. When the water freezes, the diaphragm moves to throttle the valve 94 to restrict the flow of refrigerant. The use of a

diaphragm or membrane to operate a valve under freezing conditions does not suggest use of a membrane to prevent frost damage to an impeller shaft, but in any event this reference does not suggest the remaining limitations of claim 6 which are lacking in Nguyen.

Claim 10 stands rejected under 35 U.S.C. §103 as being unpatentable over Nguyen. The examiner states that it would be obvious to substitute a ceramic shaft "in order to provide a shaft that becomes extremely brittle under cold temperatures". Without addressing the veracity of this statement, Nguyen still fails to meet the limitations of claim 6 as presently amended.

The claims as presently amended and newly presented being definite and patentable over the art of record, withdrawal of the rejections and early allowance are solicited. If an objections remain, a call to the undersigned is requested.

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